

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

Resume

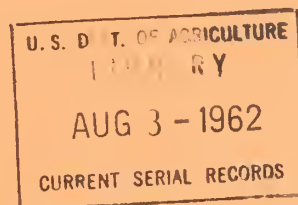
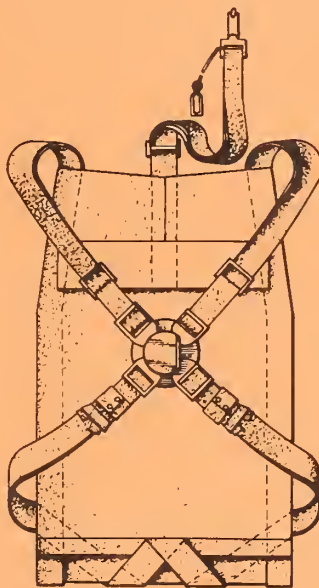
2SD388
A/US

TECHNICAL EQUIPMENT REPORT NO. 5100-9
JANUARY 1960

STANDARD CARGO DROPPER'S HARNESS

BY

MISSOULA EQUIPMENT DEVELOPMENT CENTER
FOREST SERVICE, U. S. DEPARTMENT OF AGRICULTURE
MISSOULA, MONTANA



FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

673780

2286633

NOTE TO READERS

The numbering system for Technical Equipment Reports has been changed. Reports on fire equipment matters now have prefix "5100" instead of "F".

TECHNICAL EQUIPMENT REPORT NO. 5100-9

FOR

STANDARD CARGO DROPPER'S HARNESS

Missoula Equipment Development Center
Forest Service, U. S. Department of Agriculture
Missoula, Montana
January 1960

Introduction

At the servicewide Smokejumper Workshop, the need for an improved harness was established. The Missoula Equipment Development Center was assigned the project of incorporating the desirable features of the two models in current use--the Region 1 model (Equipment Development Report No. 25, January 1954) and the Region 6 model. These are illustrated in figures 1 and 2. The improved model described herein has been approved by the Chief for use in U. S. Forest Service air operations. Previous models are to be replaced with the new standard model by May 1, 1961.



Fig. 1 Region 1 Model Harness



Fig. 2 Region 6 Model Harness



Fig. 3 Improved Model Harness, Rear View

Action

We have designed and constructed an improved cargo dropper's harness (Fig. 3) for standard servicewide use. New or improved features of the revised model were accomplished by:

1. Eliminating the wrap-around leg straps.
These straps are now aligned directly from bottom corners of the harness to the single-point release box (arrow, Fig. 4)



Fig. 4 Improved Model Harness, Side View.
Straps are Aligned Directly from Bottom
Corners to Release Box.

2. Relocating the release box assembly from right shoulder strap to right "leg" strap (see appendix).

This safety feature removes the possible hazard of a cargo dropper being struck in face or head by the release box assembly should he have to abandon the aircraft quickly.

See Fig. 5 and Fig. 6 for close-up of harness release box assembly in the locked and unlocked positions.

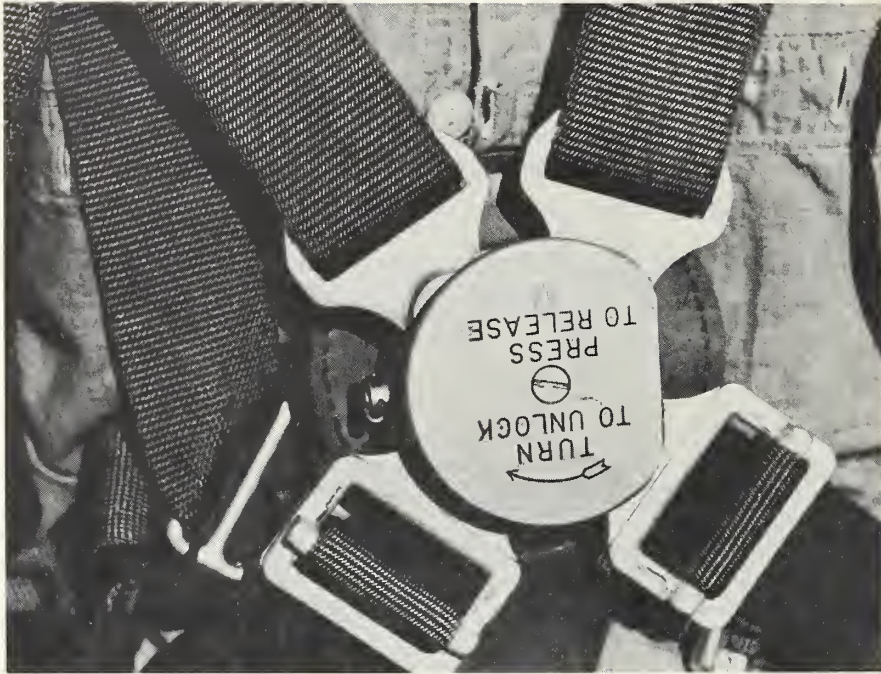


Fig. 5 Release Box Assembly in Locked Position



Fig. 6 Release Box Assembly in Un-locked Position

3. Adding parachute pack retaining pocket at bottom of harness (arrow, Fig. 7).



Fig. 7 Improved Model Harness Parachute Pack Retaining Pocket (arrow) Prevents Creeping Up of Safety Harness.

After discharge of cargo, the cargo dropper can assume a kneeling position in door of airplane (Fig. 8) to observe the cargo parachute. The harness anchors him securely to the airplane, allowing additional freedom of movement with no sliding or bunching of canvas panel or webbing.



Fig. 8 Improved Model Harness Allows More Freedom of Movement.

4. Replacing the fixed type lugs on leg straps with quick-fit lug assemblies (arrow, Fig. 9).



Fig. 9 Quick-fit Assemblies (arrow) Permits
More Rapid Adjustment of Safety Harness

This new feature enables the wearer to adjust harness much more rapidly.

5. Using heavier webbing and canvas panel to impart rigidity which makes the harness easier to put on and remove.

This harness is designed for use in conjunction with the flexible back-pack parachute and should never be worn without the parachute.

Construction details with drawings and material list are shown in appendix.

Appendix

Construction details and instructions covering relocation release box assembly.

Cargo Dropper's Harness

MATERIALS LIST

| Name | Material | Part No. No. | Req. | Cut Size | Color | Size | Specification or No. | Type |
|---------------------------|---------------------------|-----------------|---------|-------------|----------|---|-----------------------|--------------------|
| Main Canvas | Cotton Duck | 1 | 1 | 33½" x 18" | Natural | #4 | CCC-C-419 Table I | I |
| Back Strap Reinforcing | Cotton Duck | 2 | 1 | 15" x 4" | Natural | #4 | CCC-C-419 Table I | I |
| Binding Tape | Tape, Nylon | 3 | 1 | 18" | O.D. 613 | 1-1/8" | MIL-T-5038 | IV |
| Binding Tape | Tape, Nylon | 4 | 1 | 14" | O.D. 613 | 1-1/8" | MIL-T-5038 | IV |
| Binding Tape | Tape, Nylon | 5 | 1 | 6½" | O.D. 613 | 1-1/8" | MIL-T-5038 | IV |
| Binding Tape | Tape, Nylon | 6 | 2 | 5½" | O.D. 613 | 1-1/8" | MIL-T-5038 | IV |
| Leg Straps | Webbing, Nylon | 7 | 1 | 72" | O.D. 613 | 1-3/4" | MIL-W-4088 | X |
| Shoulder Straps | Webbing, Nylon | 8 | 2 | 58" | O.D. 613 | 1-3/4" | MIL-W-4088 | X |
| Anchor Strap | Webbing, Nylon | 9 | 1 | 55" | O.D. 613 | 1-3/4" | MIL-W-4088 | X |
| Back Strap | Webbing, Nylon | 10 | 1 | 23" | O.D. 613 | 1-3/4" | MIL-W-4088 | X |
| Thread, Sewing | Cotton | 11 | As Req. | | O.D. 613 | 12/4 cord V-T-276b, Ticket #12 | | 1-A1 |
| Thread | Nylon | 12 | As Req. | | O.D. 613 | 3 ply MIL-T-7807, 5-cord, left twist | | Type I Class II |
| Adapters | Steel (cadmium plated) | 13 | 3 | | Cadmium | 2¼" x 1-3/8" | MIL-H-7195, #AN6565-1 | Style A |

MATERIALS LIST (Continued)

| Name | Material | Part No. | No. Req. | Cut Size | Color | Size | Specification or No. | Type |
|-------------------------------------|------------------------|----------|----------|----------|-------------------------|---------------|-------------------------------|---------|
| Lug Assembly | Steel (cadmium plated) | 14 | 2 | | Cadmium | | MIL-H-7195, USAF #44B9347 | |
| Lug Assembly | Steel (cadmium plated) | 15 | 2 | | Cadmium | | MIL-H-7195 USAF #49B6553 | Style B |
| Release Assembly | Metal | 16 | 1 | | | | MIL-H-7195 USAF #45D18810 | B-2A |
| Snap, Parachute | Steel (Cadmium plated) | 17 | 1 | | Cadmium | 1-3/4" | MIL-H-7195 USAF #43A21538 | |
| Safety Clip W/10" Parachute Cord | Steel piano wire | 18 | 1 | | Natural | .080 | Dudek & Bock or equal | |
| Keeper Webbing | Cotton & rubber | 19 | 2 | 5" | Optional | 1 1/2" | MIL-W-5664A, Table I Class II | |
| Snap Fastener Stud & Post Assembly | Brass | 20 | 4 | | Finish #5 Chrome plated | 2A(c) & 2A(d) | MIL-F-1088A (QMC) Style 2A | 20 Line |
| Snap Fastener Cap & Socket Assembly | Brass | 21 | 4 | | Finish #5 Chrome plated | 2A(a) & 2A(b) | MIL-F-10884A (QMC) Style 2A | 20 Line |

Instructions for relocating and adjusting release box assembly.

To fasten right leg strap lug to the permanent locking stud on release box:

1. Remove bottom plate of box.
2. Remove top plate locking nut.
3. Lift up top plate until the four positioning studs are free of their sockets.
4. Rotate top plate one-half turn clockwise.
5. Return top plate positioning studs to sockets.
6. Replace & tighten locking nut.
7. Reassemble box.
8. Snap right leg strap lug into permanently locked stud of release box. Refer to Figs. 10, 11 & 12.
9. Operate release box several times to insure proper functioning.

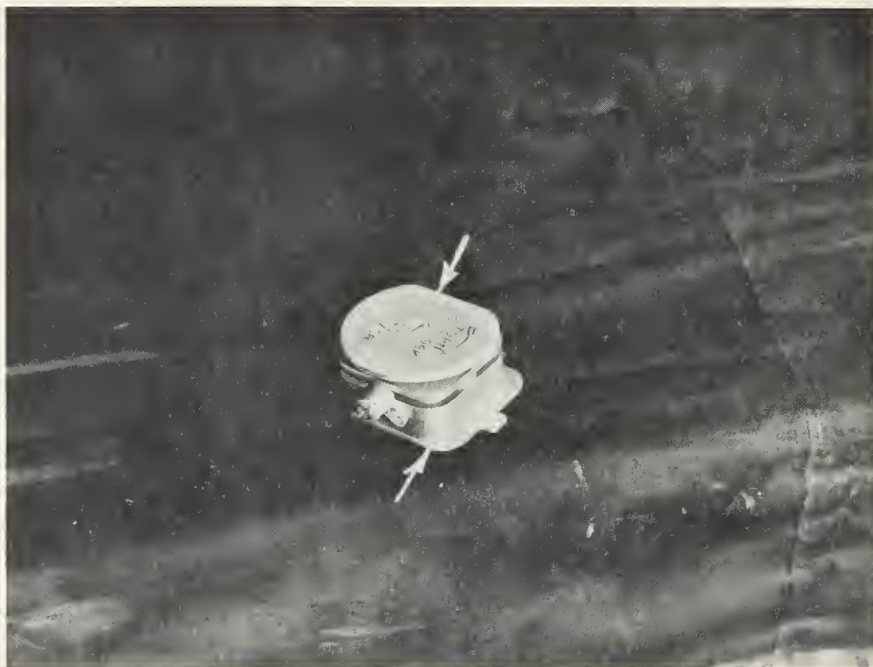


Fig. 10 Release Box Assembly Showing Top
& Bottom Plates (arrows)



Fig. 11 Release Box with Bottom Plate
Removed Showing Top Plate Lock Nut (arrow)

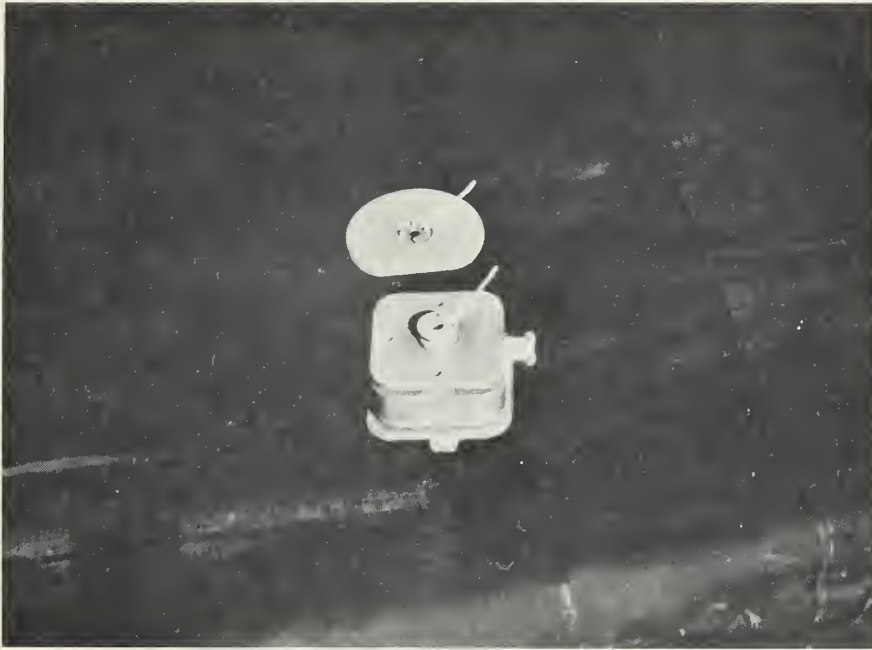
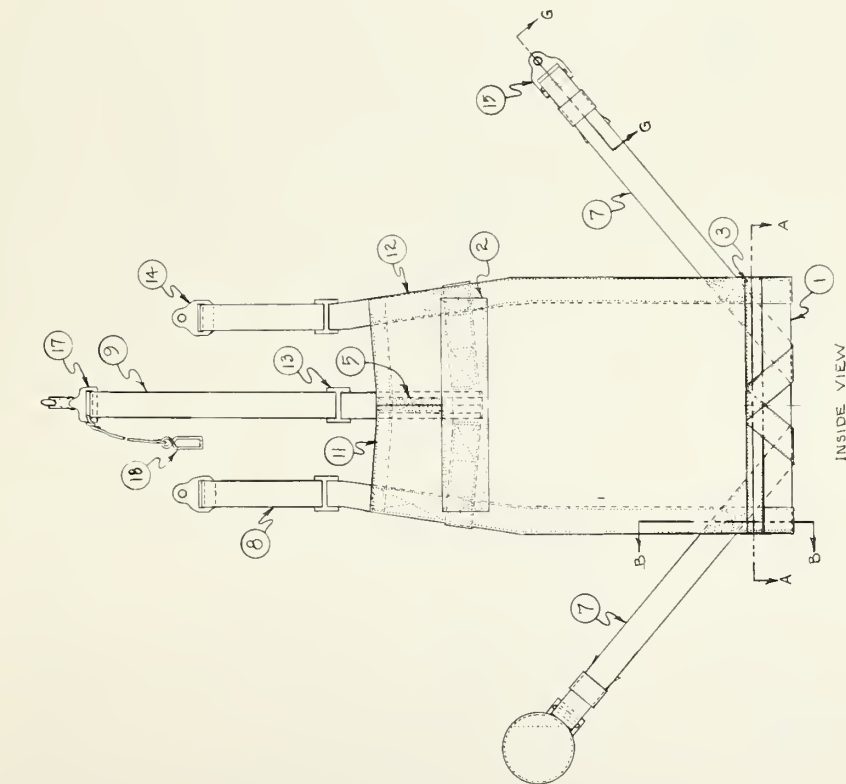
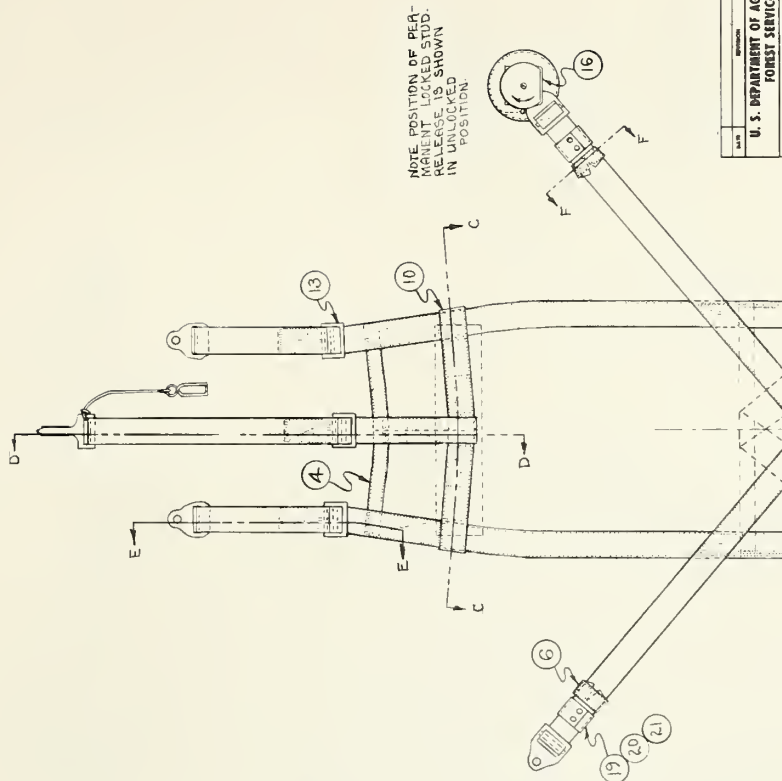


Fig. 12 Release Box with Top Plate Removed
Showing Positioning Studs & Sockets (arrows)



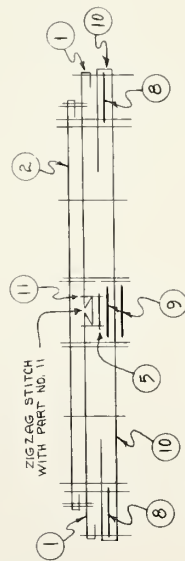
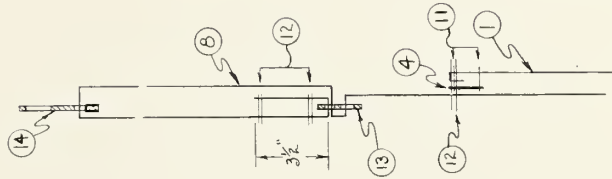
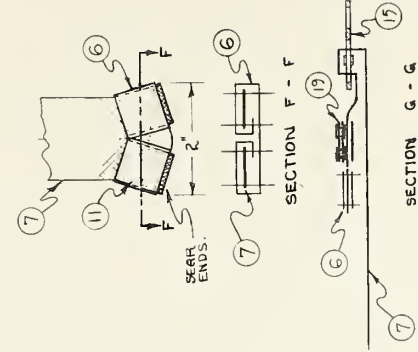
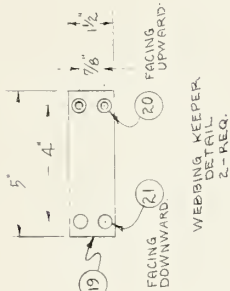
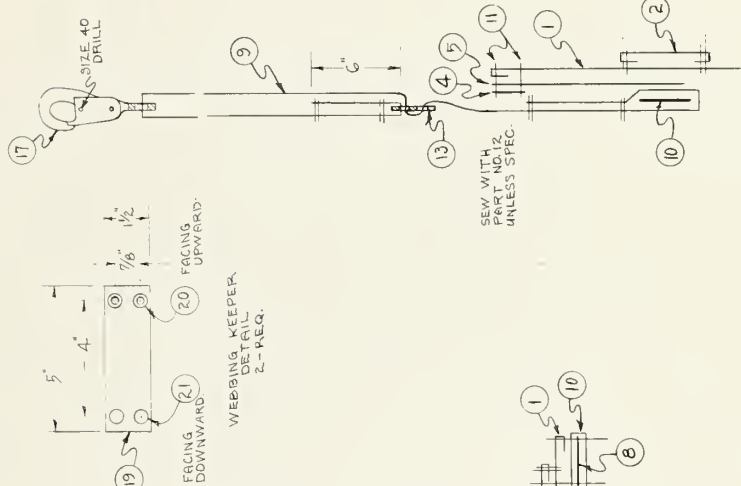
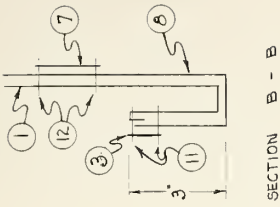
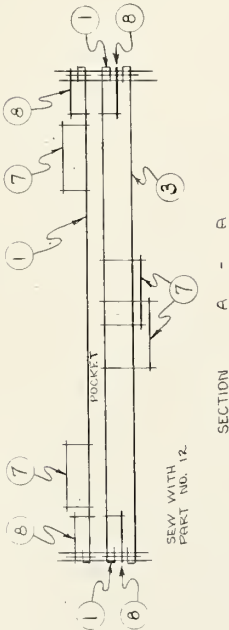
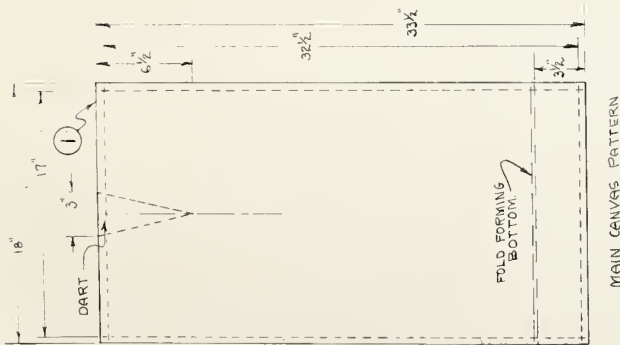
INSIDE VIEW



OUTSIDE VIEW

NOTE: POSITION OF PER-
MITS TO LOCKED STOD.
RELIEF IS SHOWN
IN UNLOCKED
POSITION.

| | | |
|---|-----------|-----------|
| DATE | REVISED | BY |
| | | |
| U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE | | |
| NATIONAL EQUIPMENT DEVELOPMENT CENTER | | |
| STANDARD CARGO DROPPERS HARNESS | | |
| DESIGN BY | APF | |
| DESIGNED BY | G. S. V. | ED-107-R1 |
| DATE | AS SPEC | |
| DATE | SEPT 1953 | |



SEW WITH PART NO. 12 UNLESS SPEC.

NOTE: SEAR ENDS OF WEBBING TO PREVENT FRAYING.

| | | |
|---------------------------------------|------------|-----------------|
| DATE | REVISION | BY |
| | | |
| U. S. DEPARTMENT OF AGRICULTURE | | |
| FOREST SERVICE | | |
| MISSOURI EQUIPMENT DEVELOPMENT CENTER | | |
| STANDARD | | |
| CARGO DROPPERS' HARNESS | | |
| DESIGNED BY | ABF | REVISION NUMBER |
| DRAWN BY | G.S.T. | |
| APPROVED BY | V.L.W. | |
| DATE | AS SPEC. | |
| DATE | SEPT. 1953 | |
| | | ED-187-R1 |
| | | 17 |

